In the Claims:

Claim 1. (Previously Presented) A method of improving embryo implantation, the method comprising contacting an embryo with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and placing the embryo in a receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 2. (Previously Presented) The method of claim 1, wherein said recombinant heparanase is a mature heparanase.

Claim 3. (Previously Presented) The method of claim 1, wherein said recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 4. (Previously Presented) The method of claim 1, wherein contacting the embryo with an effective amount of said recombinant heparanase is in vitro.

Claim 5. (Previously Presented) The method of claim 1, wherein contacting the embryo with an effective amount of said recombinant heparanase is in utero.

Claim 6. (Canceled).

Claim 7. (Previously Presented) A method of improving embryo implantation, the method comprising contacting a receptive uterus with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and placing the embryo in the receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 8. (Previously Presented) The method of claim 7, wherein said recombinant heparanase is a mature heparanase.

Claim 9. (Previously Presented) The method of claim 7, wherein said recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 10. (Canceled).

Claim 11. (Previously Presented) The method of claim 7, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase precedes placing the embryo in the receptive uterus.

Claim 12. (Previously Presented) The method of claim 7, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase is concurrent to placing the embryo in the receptive uterus.

Claim 13. (Previously Presented) A method of improving embryo implantation, the method comprising contacting a receptive uterus with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1, contacting an embryo with an effective amount of said recombinant heparanase and placing the embryo in the receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 14. (Previously Presented) The method of claim 13, wherein said recombinant heparanase is a mature heparanase.

Claim 15. (Previously Presented) The method of claim 13, wherein said recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 16. (Previously Presented) The method of claim 13, wherein contacting the embryo with an effective amount of said recombinant heparanase is in vitro.

Claim 17. (Previously Presented) The method of claim 13, wherein contacting the embryo with an effective amount of said recombinant heparanase is in utero.

Claim 18. (Canceled).

Claim 19. (Previously Presented) The method of claim 13, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase precedes placing the embryo in the receptive uterus.

Claim 20. (Previously Presented) The method of claim 13, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase is concurrent to placing the embryo in the receptive uterus.

Claim 21. (Previously Presented) A method of improving in vitro fertilization (IVF) embryo implantation, the method comprising contacting an embryo generated via IVF with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and placing the embryo in a receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 22. (Previously Presented) The method of claim 21, wherein said recombinant heparanase is a mature heparanase.

Claim 23. (Previously Presented) The method of claim 21, wherein said recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 24. (Previously Presented) The method of claim 21, wherein contacting the embryo generated via IVF with an effective amount of said recombinant heparanase is in vitro.

Claim 25. (Previously Presented) The method of claim 21, wherein contacting the embryo generated via IVF with an effective amount of said recombinant heparanase is in utero.

Claim 26. (Previously Presented) A method of improving IVF embryo implantation, the method comprising contacting a receptive uterus with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1 and placing the embryo generated via IVF in the receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 27. (Previously Presented) The method of claim 26, wherein said recombinant heparanase is a mature heparanase.

Claim 28. (Previously Presented) The method of claim 26, wherein said recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 29. (Previously Presented) The method of claim 26, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase precedes placing the embryo generated via IVF in the receptive uterus.

Claim 30. (Previously Presented) The method of claim 26, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase is concurrent to placing the embryo generated via IVF in the receptive uterus.

Claim 31. (Previously Presented) A method of improving IVF embryo implantation, the method comprising contacting a receptive uterus with an effective amount of a purified recombinant heparanase having at least 95% homology to SEQ ID NO:1, contacting an embryo generated via IVF with an effective amount of said recombinant heparanase and placing the embryo generated via IVF in the receptive uterus, whereby said embryo and said uterus are of the same species.

Claim 32. (Previously Presented) The method of claim 31, wherein said recombinant heparanase is a mature heparanase.

Claim 33. (Previously Presented) The method of claim 31, wherein said

recombinant heparanase is a pro-heparanase, cleavable into mature heparanase.

Claim 34. (Previously Presented) The method of claim 31, wherein contacting the embryo generated via IVF with an effective amount of said recombinant heparanase is in vitro.

Claim 35. (Previously Presented) The method of claim 31, wherein contacting the embryo generated via IVF with an effective amount of said recombinant heparanase is in utero.

Claim 36. (Previously Presented) The method of claim 31, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase precedes placing the embryo generated via IVF in the receptive uterus.

Claim 37. (Previously Presented) The method of claim 31, wherein contacting the receptive uterus with the effective amount of said recombinant heparanase is concurrent to placing the embryo generated via IVF in the receptive uterus.

Claims 38. – 50 (Canceled).